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# The Application of Strategic Management Accounting Techniques in Slovenian Manufacturing Companies

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**Abstract:** The last few years have seen a growing interest in strategic management accounting (SMA). Following a consideration of what accounting techniques may comprise SMA, the results of a questionnaire survey investigating the incidence of 17 SMA techniques are reported. Data from 108 large Slovenian manufacturing companies reveal that there is a wide range of application rates for the techniques appraised: capital budgeting, quality costing and competitor performance appraisal are the most widely used; valuation of customers as assets, lifetime customer profitability analysis and life cycle costing are the least widely used.

#### JEL Classification: M41

Key words: strategic management accounting, strategy, accounting techniques, Slovenia

#### Introduction

The last few years have seen a growing interest in strategic management accounting (SMA). There is a growing number of books that include 'strategic management accounting' in their title (e.g. Ward, 1992; Moores and Booth, 1993; Smith, 1997; Hoque, 2001), a growing number of international academic journals publishing papers that include this term in their titles (e.g. Accounting, organisations and Society; Advances in Management Accounting; Management Accounting; Management Accounting Research etc – see the references for more details), and casual observation of accounting curricula also suggests that courses of study entitled 'strategic management accounting' are becoming common in tertiary education.

Despite these developments, until very recently SMA has received little attention beyond the confines of conceptual consideration. To illustrate this, Lord (1996) and Tomkins and Carr (1996) actually question whether any empirical work concerned with SMA is taking place. The first empirical study directed towards determining the

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incidence of SMA usage can be attributed to Guilding et al (2000). The study offers an original distillation of a set of SMA techniques and compares the incidence of SMA techniques across three economically advanced countries: New Zealand, United Kingdom and the United States of America.

Motivated by the paucity of empirical research concerned with the use of strategically oriented management accounting techniques, this study has two main objectives:

- To appraise the application of a variety of SMA techniques in Slovenian manufacturing companies.
- To compare the application of SMA techniques across a variety of industries within the manufacturing sector.

The remainder of the paper is structured as follows: in the context of providing an overview of SMA, the next section provides background by considering what might be understood by the term 'strategic management accounting'. Following this, an outline of management accounting techniques that may be classified as SMA is provided. Subsequent sections address in turn, the research method employed, the empirical results and a conclusion that discusses findings as well as the study's limitations.

## Background

Since the mid 1980s criticisms about the current state of management accounting practices were widely publicised in the professional and academic literature (see Kaplan, 1984; Kaplan, 1986; Johnson and Kaplan, 1987; Ashton et al, 1991; Bhimani and Bromwich, 1992; Drury, 1992; Clarke, 1995). The principal criticisms of 'conventional' management accounting practices can be summarised under the following headings (Drury, 1992, p. 2):

- Conventional management accounting does not meet the needs of today's competitive and technological environment.
- Traditional product costing systems provide misleading information for decision-making purposes.
- Management accounting practices have become subservient to financial accounting requirements.
- Conventional management accounting focuses almost entirely on internal activities, whereas very little attention is given to the external environment in which the business operates.

Albeit relevant, the headings above fail to recognise the most general and critical weakness of traditional management accounting, identified by Kaplan (1984). He argued (p. 414) that 'management accounting can no more exist as a separate discipline, developing its own set of procedures and measurement systems and applying these universally to all firms without regard the underlying values, goals, and strategies of particular firms, but it must serve the strategic objectives of the firm'. Stated in an alternative manner, in the increasingly complex and competitive environment management accounting was called upon to provide the information necessary for the formulation, implementation and realization of strategies for achieving competitive advantage (Ward, 1992; Palmer, 1992; Roslender, 1995).

The theme of competitive advantage predominates Porter's influential writings on strategy (Porter, 1980; 1998), dealing with issues such as customers, competitors, quality and long-term strategy sustainability (profitability). Although these issues represent the very essence of competitive advantage concept, they are largely neglected by the conventional management accounting. By many commentators this is thought to be the reason why providing relevant information configured in a way in which it can be used for strategy is the major contemporary challenge for accountants (Ward, 1992; Bromwich and Bhimani, 1994).

The criticisms raised must have hit fertile ground since Cravens and Guilding (2001) report that recent past reflects something of a management accounting renaissance. Revisions of management accounting practices have produced a variety of novel approaches in the fields of costing, strategic investment appraisal, and strategic control and performance management which can be understood as a response to the modern day challenge of securing a competitive advantage and meeting competitive goals. Parallel with the developments at the level of individual accounting techniques also a new general term 'strategic management accounting' has emerged which is usually considered to account for a variety of recent changes in management accounting practice.

The revisions of accounting practice were especially profound in transition countries, such as Slovenia (Kavcic et al, 1998). In these countries, fundamental changes following the introduction of market economy in the early 1990s (eg trade liberalisation, privatisation) gave rise to completely new rules and new competitors. As a result of trade liberalisation, the bargaining position of customers has been strengthened and that of suppliers has grown weaker, as hordes of foreign competitors have arrived, including the world's strongest. The need for strategic thinking has never been more important than in the period of transition (Bogel and Huszty, 1999) and without organisation's information-processing capacity the decisions that emerge will be flawed or late, thus resulting in suboptimal performance (Gupta, 1987).

## What Techniques Comprise Strategic Management Accounting?

The generally acknowledged father of SMA is Simmonds as he was the first to coin the term (Simmonds, 1981). He defined SMA as (p. 26) 'the provision and analysis of management accounting data about a business and its competitors for use in developing and monitoring the business strategy'. Further perspectives on SMA have been offered by Bromwich (1988). He defined SMA (p. 27) as 'the evaluation of the enterprise's comparative advantages or value added relative to its competitors and to evaluate the benefits the enterprise's products yield over their lifetime to customers and the benefits which these sales yield to the firm over a long decision horizon'. New to this concept are the concerns with customers and products, and an explicit emphasis on the long term. In the 1990s, a great number of other authors have done a job of defining and describing SMA (e.g. Bromwich, 1990; Ward, 1992; Palmer, 1992; Ryan, 1995; Roslender, 1995; Coad, 1996; Smith, 1997; Dixon, 1998; Roslender et al, 1998; Brouthers in Roozen, 1999; Kolar, 1999; Hoque, 2001). Although their definitions and descriptions of SMA differ considerably, three general characteristics of SMA can be acknowledged from their writings:

- External focus
- Long-term forward-looking orientation
- Provision of both financial and non-financial information for decision-making purposes.

The first original distillation of a set of SMA techniques was offered by Guilding et al (2000). In this work the authors identified 12 management accounting techniques that comprise SMA. These are (in alphabetical order): attribute costing, brand value budgeting and monitoring, competitor cost assessment, competitive position monitoring, competitor appraisal based on published financial statements, life cycle costing, quality costing, strategic costing, strategic pricing, target costing, and value chain costing. In a subsequent work, Cravens and Guilding (2001) added three more techniques to this list, making a total of 15 techniques. The three additional techniques are: activity-based costing, benchmarking and integrated performance measurement. A third work by Guilding and McManus (2002) on customer accounting can also be considered to constitute the identification of strategic management accounting techniques as customer accounting is often regarded as an integral part of strategic management accounting (e.g. Ward, 1992; Foster and Gupta, 1994; Hoque, 2001). In this work, Guilding and McManus identified 4 accounting techniques that comprise customer accounting. These are: customer profitability analysis, customer segment profitability analysis, lifetime customer profitability analysis, and valuation of customers or customer groups as

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assets. In total, 19 techniques that can be characterised as SMA have been identified and empirically investigated in the professional literature to this date.

Generating a definite list of SMA techniques is bound to be problematical as there is no agreed conceptual framework outlining what constitutes SMA and is therefore bound to involve a degree of subjectivity. The criteria adopted by Guilding et al (2000), Cravens and Guilding (2001) and Guilding and McManus (2002) do not relate to the proximity of the accounting technique to the needs of managers charged with managing corporate strategy, rather, they relate to the extent to which a management accounting technique embodies strategic orientations (i.e. externally-oriented and/or long-term focus). All techniques listed above were drawn from previous literature. While this supports their credibility as accounting techniques worthy of consideration, Guilding et al (2000) acknowledged that it does not exclude the possibility of overlapping techniques (two such cases are particularly apparent, namely brand value budgeting vs brand monitoring and customer profitability analysis vs customer segment profitability analysis). The authors also acknowledged that the list of techniques is incomplete. At the present stage it would certainly be premature to suggest that we are moving towards the distillation of a definite listing of SMA techniques.

#### Strategic Management Accounting Techniques Appraised

Adopting the same criteria as Guilding et al (2000) and Cravens and Guilding (2001), in this study only management accounting techniques highlighting an external and/or future focus are appraised. Seventeen techniques have been identified as qualifying as SMA techniques according to these criteria. The techniques comprise the following (in alphabetical order): attribute costing, benchmarking, brand valuation, capital budgeting, competitor cost assessment, competitive position monitoring, competitor appraisal based on published financial statements (also competitor performance appraisal), customer profitability analysis, integrated performance measurement, life cycle costing, lifetime customer profitability analysis, quality costing, strategic costing, strategic pricing, target costing, valuation of customers or customer groups as assets, and value chain costing.

Compared to the listing under previous sub-heading, three techniques have been excluded from appraisal. The excluded techniques are activity-based costing, brand monitoring and customer segment profitability analysis. For activity-based costing, the position has been taken here that this technique does not constitute an example of SMA. Departing from the views expressed by Cooper and Kaplan (1988) it was felt that activity-based costing is more concerned with costing accuracy than the adoption of a strategic-orientation. For the remaining two techniques, the position has been

taken that these techniques overlap remarkably with two related techniques on the listing (namely brand valuation and customer profitability analysis, respectively). The two excluded techniques represent only a particular aspect of the two retained techniques, therefore any itemization treating them as separate techniques is conceptually problematic at least, if not even invalid.

Compared to the listing under previous sub-heading, one technique has also been added to our appraisal, namely capital budgeting. Although capital budgeting is a relatively old technique and well grounded in traditional management accounting literature, this technique exhibits a remarkably explicit future focus. Capital expenditures involve investments of significant financial resources in long-term projects to develop or introduce new products or services, to expand capacity, or to change current production or service facilities, which might even put the future existence of the company at risk (Morse et al, 2003). Thus, taking into account the strategic nature and long-term focus of capital expenditure decisions, capital budgeting technique was also labeled as comprising SMA.

#### **Research Method**

#### Sampling Procedure

Data were collected using a mailed questionnaire survey. An initial sample was drawn from the Slovenian Chamber of Commerce and Trade disclosure of the 500 largest Slovenian companies (in terms of total revenues), which includes most businesses from a variety of industries (with the exception of health care organisations, financial institutions, and educational institutions). Since the focus of the study is on manufacturing companies, the listing was then filtered and only manufacturing companies were retained in the sample. The filtered sample comprised 254 manufacturing companies.

Size was used as an indicator of the likelihood that the firms would possess formal and computerised accounting systems having the potential of providing strategic accounting information on time. Since the focus is on large companies, a second filter was imposed to select companies into the sample, that being the number of employees. Only companies with 100 or more employees were selected. In addition to that, the sample was further reduced due to incorrect or incomplete mailing addresses in certain cases. Thus, the final sample comprised 206 manufacturing companies.

To develop an accurate mailing list and to improve the response rate, each company was telephoned and the names of the most suitable person to complete the survey were identified. As anticipated, these were typically Chief Accountant, Chief Controller, Chief Financial Officer or Chief Planner and Analyst. In most cases the particular manager was spoken to, and the purpose of the research explained. The mailed survey package included an introductory letter explaining the purpose of the research, a copy of the survey with a glossary of terms used and a postage-paid envelope. The first mailing resulted in 70 usable responses. A reminder letter was posted one month after the initial mail-out. The follow-up mailing yielded additional 38 responses. Thus, the overall usable response rate was 52,4 % (108/206).

To estimate possible non-response bias, Kolmogorov-Smirnoff tests were conducted to investigate for differences in the responses provided by early and late respondents (the first and last 25% of questionnaires returned were analysed). Significant differences (p<0,05) were not noted for any of the questions. While this suggests that non-response bias is not a significant threat to the validity of the study, the potential of the data being biased should be acknowledged. Accountants in firms that employ SMA techniques to relatively high degree may be more likely to respond than those in firms that employ these techniques to a relatively low degree.

### Variable Measurement

The degree to which the various SMA techniques were used was measured using instruments developed by Cravens and Guilding (2001) and Guilding and McManus (2002). Measurement of the degree of usage was achieved by posing the question: 'To what extent does your organisation use the following techniques?' Immediately following this question, the 17 SMA techniques were listed together with a Likert-type scale ranging from '1' (not at all), to '7' (to a great extent). A glossary was also included with definitions of SMA techniques to aid interpretation of SMA terminology.

For the capital budgeting technique, not appraised in any of the studies above, the following definition was provided to respondents: 'Capital budgeting is a financial evaluation of investment opportunities which typically includes comparing future cash inflows with the initial investment outlay. The evaluation can include a variety of complementary techniques, such as Net present value, Internal rate of return, Payback period and others'.

### Results

Table 1 presents the descriptive statistics for the usage levels of the seventeen SMA techniques. The techniques are presented in descending order of usage, with means ranging from 5,70 (capital budgeting) to 2,00 (valuation of customers as assets).

Mean usage scores at or above the midpoint of the scale are evident for eleven of the seventeen techniques. By far the most widely used techniques are capital budgeting and quality costing, followed by competitor performance appraisal, benchmarking and strategic pricing. The least widely used are valuation of customers as assets, lifetime customer profitability and life cycle costing.

SMA technique	N	Mean <sup>\$</sup>	Std. dev.	
Capital budgeting	108	5.70	1.55	
Quality costing	108	5.14	1.98	
Competitor performance appraisal	108	4.48	1.75	
Benchmarking	108	4.41	1.73	
Strategic pricing	108	4.39	1.71	
Competitive position monitoring	107	4.36	1.69	
Strategic costing	107	4.24	1.70	
Customer profitability analysis	107	4.24	1.82	
Integrated performance measurement	108	4.07	1.74	
Target costing	108	4.07	1.90	
Value chain costing	107	4.01	1.87	
Attribute costing	107	3.84	1.85	
Brand valuation	*83	3.30	1.89	
Competitor cost assessment	108	3.28	1.72	
Life cycle costing	107	3.00	1.69	
Lifetime customer profitability analysis	106	2.77	1.73	
Valuation of customers as assets	105	2.00	1.28	

Table 1: Descriptive statistics of strategic management accounting techniques

<sup>\$</sup>Scale where 1: low usage; 7: high usage

\*Number of valid responses to this question is 108, however for this particular variable the respondents were given the option to indicate that this technique is not applicable in their company because their company does not possess brands. Companies that opted for this option were treated as missing values in subsequent analyses.

Among the more widely used techniques, capital budgeting technique and quality costing are undoubtedly standing out. For capital budgeting this is not surprising. The technique is well grounded in both management accounting and financial management literature and has been taught at university level programs for decades.

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The almost equally remarkable usage of quality costing should not come as a surprise either. Almost all modern-day companies state customer satisfaction as one of their top strategic objectives, whereby quality is one of the central elements of customer satisfaction.

Industry group (with SKD ticker)	Number of companies	Percent	
DA – food, beverages, and tobacco	17	15.7	
DB – textile and apparel	9	8.3	
DC – leather and leather products	4	3.7	
DD – wood	3	2.8	
DE – paper	6	5.6	
DF – fuel (refining)	1	0.9	
DG – chemicals and plastics	12	11.1	
DH – rubber	4	3.7	
DI – other nonmetalic mineral products	2	1.8	
DJ – metal products	14	13.0	
DK – machinery	9	8.3	
DL – electric and electronics	13	12.0	
DM – automotive	6	5.6	
DN – furniture and recycling	8	7.4	
Total	108	100.0	

Table 2: Division of sampled companies into industry groups (according to Slovenian Classification of Industries - SKD)

Among the less widely used techniques, three are especially standing out: valuation of customers as assets, lifetime customer profitability analysis and life cycle costing. The first two least widely used techniques both contained the word 'customer', and all three of them can be distinguished by their long-termist orientation. This findings support the long lasting debate in professional literature that accounting in general is too historically and short-term oriented.

Since the manufacturing sector consists of remarkably heterogeneous industries (and also companies within these industries), cross-industry comparison of strategic management accounting techniques usage was then undertaken to get a more in-depth insight into the accounting practices of Slovenian manufacturing companies.

In order to explore the cross-industry differences in SMA techniques usage rates, sampled companies were divided into main industry groups. According to the methodology of Slovenian Classification of Industries (SKD), the sampled companies comprised 14 industry groups (see table 2). The group frequencies however differ widely. The most populous in the sample is the food, beverages, and tobacco group (consisting of 15,7 % of all sampled companies), followed by metal producers group, and electric and electronics group. The least populous of the main industry groups is the fuel and refining group (consisting of only 1 company or 0,9 % of all sampled companies).

Since a certain minimum number of companies are desired in each group for any potential attempt to generalize the results, the 14 categories have then been merged into 5 main industry groups. The 5 merged categories are presented in table 3.

To test the cross-industry differences in SMA techniques application rates, the mean scores for each of the 5 main industry groups were calculated (see table 4). The F-tests indicate that statistical differences exist for individual variables across groups, but do not provide evidence that statistical differences exist between groups.

The results show that usage rates are significantly distinct across manufacturing industries for three SMA techniques. These are quality costing, competitive performance appraisal, and value chain costing.

Overall, metal products industry (5 times rank 1; 6 times rank 2) and food, beverages and tobacco industry (5 times rank 1; 3 times rank 2) tend to demonstrate highest usage rates. On the other hand, textile, leather, wood, and furniture industries tend to demonstrate the lowest usage rates (7 times rank 5; 2 times rank 4).

Main manufacturing industry subgroups	Number of firms	Percent
I. Food, beverages, and tobacco	17	15.7
II. Textile, apparel, leather, wood, and furniture	30	27.8
III. Chemicals, plastics, rubber, and non-metallic products	19	17.6
IV. Metal products	14	13.0
V. Machinery, electric and electronics products, automotive products	28	25.9
Total	108	100.0

Table 3: Presentation of merged manufacturing industry groups

SMA technique	Main industry group (see table 3 for legend) and group size				F-test <sup>§</sup>	
	I.	II.	III.	IV.	V.	
	17	30	19	14	28	
Capital budgeting	6.12 (1)	5.27 (5)	5.53 (4)	6.07 (2)	5.86 (3)	0.13
Quality costing	4.53 (5)	4.63 (4)	4.95 (3)	5.93 (1)	5.81 (2)	*0.01
Competitive performance appraisal	5.59 (1)	4.50 (3)	4.72 (2)	3.64 (5)	4.04 (4)	*0.01
Benchmarking	4.47 (3)	4.47 (3)	3.74 (5)	4.50 (2)	4.71 (1)	0.41
Strategic pricing	4.65 (2)	3.93 (5)	5.05 (1)	4.29 (4)	4.32 (3)	0.22
Competitive position monitoring	4.82 (1)	4.10 (5)	4.63 (2)	4.21 (4)	4.25 (3)	0.64
Strategic costing	4.31 (3)	4.14 (4)	4.58 (1)	4.57 (2)	3.89 (5)	0.66
Customer profitability analysis	4.38 (2)	4.03 (5)	4.05 (4)	4.64 (1)	4.32 (3)	0.84
Integrated performance measurement	4.06 (3)	3.70 (5)	3.74 (4)	4.43 (2)	4.50 (1)	0.28
Target costing	4.18 (2)	3.90 (3)	3.84 (4)	3.36 (5)	4.71 (1)	0.17
Value chain costing	4.88 (1)	3.37 (5)	4.37 (3)	4.64 (2)	3.61 (4)	*0.01
Attribute costing	3.65 (5)	3.80 (3)	3.68 (4)	4.29 (1)	3.89 (2)	0.86
Brand valuation	3.41 (3)	3.60(1)	3.53 (2)	2.77 (5)	3.00 (4)	0.62
Competitor cost assessment	3.53 (1)	3.30 (3)	3.32 (2)	3.00 (5)	3.21 (4)	0.92
Life cycle costing	2.82 (4)	2.59 (5)	3.44 (1)	3.29 (2)	3.11 (3)	0.49
Lifetime cust. profitability analysis	2.29 (5)	2.69 (3)	2.58 (4)	3.43 (1)	2.93 (2)	0.43
Valuation of customers as assets	1.82 (5)	1.93 (3)	2.18 (2)	2.43 (1)	1.86 (4)	0.64

Table 4. Mean scores of variables within main industry groups (rankings of variables across industry groups in parentheses)

 $^{\text{S}}$  F-test significance level – significant F-test (p<0.05) indicates that statistical differences exist for individual variables across groups, but do not provide evidence that statistical differences exist between groups.

\* F-test is statistically significant at 0.05 significance level.

A more detailed look into the results reveals interesting cross-industry differences. Competitor accounting is apparently of vital importance for food,

beverages and tobacco producers, as they report highest relative usage rates for competitor-focused techniques. This group also places greatest importance on effective capital budgeting and value chain costing. For metal products industry apparently customer accounting is of vital importance, as they report highest relative usage rates for customer-focused techniques. This group also places greatest importance on quality and value for money features of their products, as they report highest quality and attribute costing usage rates.

The machinery, electrics, and automotive industries report highest cross-industry usage rates for benchmarking, integrated performance measurement and target costing. Chemicals, plastic and non-metallic products industries on the other hand report highest usage rates for strategic pricing, strategic costing and life cycle costing. In the textile, leather, wood and furniture industries only one technique is relatively most widely used, namely brand valuation.

## **Conclusion and Discussion**

Two main contributions arise from this study. First, it provides insight into the relative usage rates of SMA techniques and second, it has uncovered the differences in the relative usage rates across a variety of manufacturing industries.

With respect to the relative usage rates of the SMA techniques, for eleven of the appraised seventeen techniques, the mean usage rate is above the mid-point of the measurement scale that ranged from 'not at all' to 'to a great extent'. On average, the appraised usage rates are higher than those reported by Cravens and Guilding (2001), thereby negating the finding by Kavcic et al (1998) that more recent developments are implemented by Slovenian accounting practitioners at a relatively slow pace.

The most widely used technique is capital budgeting. This was to be expected, as capital budgeting is a relatively old technique well grounded in traditional management accounting literature. The second ranking technique is quality costing. This underlines the importance of total quality management paradigm, shifting management thinking from business-as-usual to continuous improvement (Hoque, 2001). The third ranking technique is competitor performance appraisal. This also is not surprising, since accountants are well versed in tasks of analyzing financial statements, and underlines the importance of competitor accounting as a strategic management accounting tool (Ward, 1993).

Two of the least widely used techniques both contained the word 'customer' and can be distinguished by their long-termist orientation. It appears that customer accounting is another accounting technique where the long-standing criticism of accounting's short-termist tendency is again in evidence. The relatively low importance attached to accounting for customers as assets, which is a finding flying

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in the face of the relationship marketing philosophy, highlights the problem of reconciling the accounting paradigm with marketing management's conception of what constitutes an asset (Guilding and McManus, 2002).

Cross-industry comparison reveals that usage rates differ across industries. Overall, the metal products industry, followed closely by food, beverages, and tobacco industries, tend to demonstrate highest usage rates. This finding may be explained by the intensity of competition in these industries. As it was seen, these two industry groups are the most populous of all sampled industries; therefore the sheer presence of competitive companies can be understood as an incentive for sound decision-making and consequentially for an enhanced information-processing capacity (Gupta, 1987). Domestic competition is not the fiercest, though. Taking into account the fact that trade with these products is completely liberalised, foreign competitors (especially those from European Union) have full access to Slovenian markets therefore providing even greater incentive are for strategic management accounting techniques usage.

The lowest usage rates, on the other hand, are demonstrated by the textile, leather, wood, and furniture industries. The latter may be interpreted in light of the general context of these industries. These are mainly labor intensive and therefore bound to be uncompetitive in any developed economy with relatively high labor costs. The old-fashioned accounting practices are therefore just a reflection of the current general state in these industries, namely the state of slow and painful agony.

The study's findings should be interpreted in light of several limitations. In addition to generally accepted limitations of survey research, a further problem relates to the choice and operationalisation of the seventeen SMA techniques. Others may, with justification, see an alternative set of techniques as constituting SMA. This problem is bound to persist, for even though conventional management accounting techniques have a longer history than strategic management accounting techniques, reference to any set of management accounting textbooks will reveal a limited consensus on how a listing of conventional management accounting techniques may be achieved. Similarly, due to the nascent nature of SMA literature, standardisation of the way terms are used in practice is bound to be limited (Cravens and Guilding, 2001). While attention should be drawn to these limitations, in a study concerned with socially under-defined constructs, there is little the researcher can do to counter such problems.

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